BROOKSIDE COAL MINE,
(Sloss-Sheffield Steel & Iron Coal Mine)
Birmingham Industrial Dietrict
Mount Olive Road, 600 feet
North of Five Mile Creek Bridge
Brookeide
Jeffereon County
Alabama

HAER No. AL-17

PHOTOGRAPHS

REDUCED COPIES OF DRAWINGS

WRITTEN HISTORICAL & DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

HAER
ALA
37-BROK,
5-

HISTORIC AMERICAN ENGINEERING RECORD

BROOKSIDE COAL MINE
(Sloss-Sheffield Steel & Iron Coal Mine)

HAER No. AL-17

Location: The Brookside Coal Mine and Beehive Coke Ovens site is located in Jefferson County, Alabama, within the incorporated limits of the town of Brookside, ten miles northwest of Birmingham. The site is adjacent to and northwest of Mount Olive Road, also designated as Jefferson County Highway 112. It is roughly one quarter mile north of Five Mile Creek, across the bridge from the town of Brookside. A short dirt road enters the site from Mount Olive Road.

Present Owner: The site is currently owned by United Land Company, a division of U.S. Pipe and Foundry Company, a subsidiary of the Jim Walter Corporation, 3300 First Avenue North, Birmingham, Alabama 35222, telephone (205)254-7459.

Present Use: Closed in 1917, the brookside Mines and Coke Ovens are abandoned. The superstructure of the mine was razed when closed, and nature has reclaimed much of the site. However, the mines are intact and the foundations of the coke ovens are stable.

Significance: The coal mining complex at Brookside exemplifies the captive mining that was a vital feature of the vertically integrated ironmaking system of the Birmingham Industrial District. Ironmaking companies like Sloss drew minerals from company-owned lands to provide fuel for the blast furnaces that produced merchant pig iron.

The Brookside Mines also illustrate an advanced state of mechanization for the time, and the foundations of a Robinson-Ramsay coal washer represent a significant technological innovation in the development of the district. The existence of beehive coke ovens is a vital feature of the period prior to the development of by-product coke ovens, when the production of coke as fuel for local blast furnaces was often an integral part of the coal mining process. It is the best preserved of the early coal mines in the district.

Project Information: This recording project is part of the Historic American Engineering Record, a long range program to document the engineering, industrial, and

transportational heritage of the United States.

The Birmingham District Recording was cosponsored during the summer of 1992 by HAER and by the Birmingham Historical Society, Marjorie L. White, Director.

Historian: J. Lewis Shannon, Summer 1992.

HISTORY

Coal mining at Brookside began in 1886 when the first drift mine was opened by the Coalburg Coal and Coke Company under the supervision of Edward M. Tutwiler, a prominent engineer in the development of the Birmingham District. The site was purchased the next year by the Sloss Iron and Steel Company, founded by James Withers Sloss, to provide coke to fuel the Sloss blast furnaces in Birmingham, and was thereafter owned and operated by that company. As such, this site constitutes a typical example of the captive coal mines of the Birmingham District, which were developed by major iron and steel companies to support their smelting operations.[1]

Prior to the development of modern by-product coke ovens, common practice converted coal to coke near the site of the coal mines. This procedure was used at Brookside, and Sloss Company constructed two batteries of 100 beehive coke ovens. These ovens were typical banked beehives built in single rows, terraced into the hillside and curved to follow the topography of the site. (Coke Ovens were also built standing in double rows with access on both sides, referred to as "block " construction.) This configuration used the rugged terrain to an advantage, minimizing the need for lifting the coal or coke and simplifying the transportation of materials. Since the drift opening was more than 50' higher than the tracks of the Georgia Pacific Railroad that serviced the site, much of the handling of materials on site was powered by gravity.[2] Early site plans indicate that coal was brought straight from the portal of the mine to the upper or "high line" tracks of the oven banks, and charged into the ovens through the trunnel head.[3] The lower or "low line" tracks carried rail cars into which the coke was raked from the front openings of the ovens after it had been quenched. This route of handling materials was changed early in the history of operations at Brookside, when the process of washing coal prior to coking was implemented at the plant.

---

[1]Alabama, Second Biennial Report of the Inspectors of Mines, 1898, by J. De B. Hooper (Birmingham: Dispatch Printing Co., 1898). 14; Ethel Armes, The Story of Coal and Iron in Alabama (Birmingham Chamber of Commerce, 1910), 437-39.

[2]Alabama, First Biennial Report of the Inspectors of Mines, 1895, James D. Hillhouse (n.p., 1895), 11.

[3]Several drawings pertaining to the Brookside mining operations are in the possession of the United Land company, which currently owns the property.

The practice of washing coal for coking was used to some degree from the very beginning of industrial development in the Birmingham District. Washing was necessary to efficiently produce the quality of coke needed in blast furnaces. Although the lump coal could be coked as it came from the mines, the slack coal, 3/4" mesh, was of little value. When this coal was mined it contained bits of slate, rock, and iron pyrites, which increased the amount of ash produced in combustion and complicated the smelting process. The Oxmoor Experiment, which in 1876 proved the viability of using coke from local coal to smelt iron ore, used a Stutz coal washer, but washing coal as a regular practice was not common until 1892.[4]

Further refinement of coal washing equipment was necessary, however, to increase the efficiency of the process when dealing with coal found in the region. These refinements were introduced in 1894 when Erskine R. Ramsay, a nationally prominent mining engineer working in the Birmingham District, applied for patents on his coal washing apparatus.[5]

To separate the slack from the impurities, coal washers used the force of gravity acting on the mixture of coal and impurities suspended in water. Due to its lower specific gravity, coal could be brought to the top of the mixture while the denser frock and slate sank to the bottom. One system used at the time was the Robinson coal washer, designed in England. Although this apparatus had proven effective on some coals, fine impurities clogged the water intakes and pumps of the system. Ramsay introduced a "tank and sludge washer", which used incorporated automatic flushing of accumulated sludge and automatic water level control to compensate for the flushing action. Combined with Ramsay's shaker screens to separate the grades of coal, the Robinson-Ramsay coal washer effectively solved the problems associated with the coal of this area.[6]

This innovation was perfected at the Pratt Mines of the Tennessee Coal, Iron and Railroad Company, where Ramsay was superintendent of Mines. The first Robinson-Ramsay coal washer was installed at Pratt Slope No. 1 in 1892. By the time he acquired patent rights on the system, Ramsay had perfected the apparatus and had begun

---

[4]Alabama Geological Survey (AGS), Iron Making in Alabama, 2nd ed., by William Battle Phillips (Montgomery: Roemor Printing Co., 1898,) 218-19.

[5]James Saxon Childers, Erskine Ramsay: His Life and Achievements (New York: Carwright & Ewing, 1942), 202.

[6]Ibid., 198-202, 531-33.

to construct his washers throughout the district. By 1897 there were eleven Robinson-Ramsay washers in use in the area, including one at the Brookside mines, and two more under construction.[7]

The availability of a reliable and effective coal washer had a dramatic impact on the development of the local coal mining industry drammatically increasing mine production. By 1887, approximately half of the coke used in local blast furnaces was made from washed slack, suggesting that coal producers had gained the option of making larger grades of coal available for sale on burgeoning steam coal market, or crushing the lump coal for use in coke ovens, depending on market fluctuations at any given time. The Sloss Iron and Steel Company was in the forefront of this technology operating four of the first eleven Robinson-Ramsay washers built.[8]

The mines at Brookside were technically advanced in other ways. In addition to the Robinson-Ramsay coal washer, mining operations also used an H. K. Porter mole engine, or locomotive, produced in Pittsburgh. This engine was used with six Ingersoll Sargent coal cutting machines, and the mine was ventilated by a 12' diameter Crawford and McCrimmen fan. This survey indicates a high degree of mechanization for a coal mine of this era.[9]

By 1898 Brookside had become the headquarters of the four Sloss mines in the immediate area, including the Brazil, Cardiff, and Coalburg mines. In fact, the slack from Brazil mines was transported to Brookside to be washed and coked. The Robinson-Ramsay washer at Brookside could process 400 tons of slack coal per day, while the total daily coal production of the Brookside mines in 1900 was only 300 tons.[10]

The miners who worked at Brookside were unique in the Birmingham Distriot. Efforts of the Sloss Company to lure experienced miners to the area resulted in the development of an Eastern European community in Brookside. Early immigrants, many of who were from Czechoslovakia, found a new home where industry was growing and jobs for skilled miners were plentiful. As they encouraged friends and family to join them, the ethnic identity

---

[7]Ibid., 198-202; AGS, Iron Making, 218.

[8]AGS, Iron Making, 218-19.

[9]Alabama, First Report of Mines, 11.

[10]Alabama, Second Report of Mines, 11; AGS, Iron Making, 218; State of Alabama, Third Biennial Report of the Inspectors of Mines, by J. De B. Hooper (Birmingham: n.p., 1900), 21.

of Brookside grew stronger. Geographically and culturally isolated, the immigrants lives often centered around the Russian Orthodox Catholic Church. These miners tended to organize more quickly and cohesively than many of the other mining communities in the district, and proved to be a formidable force during labor disputes. A particularly violent strike idled the mines at Brookside in 1906, and when work did resume it was not without changes.[11]

Between 1910 and 1920 the mines at Brookside appear to have been in constant state of flux. Mining operations were carried out along the Pratt seam until 1916, the American seam until 1914, and the Nickel Plate seam after 1916. The number of drift openings varied from one to five, and by 1919 a slope had been added. The work force varied drastically, from fifty-four in 1910 to over 600 in 1914. Mine ventilation was provided by fan, furnace, or a combination of the two. Although it appears that furnace ventilation would be a backward step in technology from the fan of 1895, it should be noted that one underground furnace could provide the ventilation of several large mechanical fans of that time, and could utilize coal at its source, reducing transportation of fuel. Finally, records indicate that from 1913 all mining at Brookside was done by pick, and it is unclear why these mines did not continue to use mechanical coal cutters.[12]

The final year of operations at Brookside was 1920. During the week of July 3, 1920, the Brookside mine began to lose money due to a local strike. By July 10 this strike had spread to other Sloss mines at Blossburg and Drifton, and these mines were still

---

[11]John Sokira, interview by Selna Cason, July 24, 1975 transcript, Samford University Program for Oral History, Samford University Special Collections, Birmingham AL; Annie Sokira, interview by Selna Cason, July 24, 1975 transcript, Samford University Program for Oral History, Samford University Special Collections, Birmingham AL.

[12]Alabama, Report of Inspector of Alabama Coal Mines, 1909, by Freret & Grant, engineers (Birmingham: n.p., 1909), 16; Alabama, Annual Report of Coal Mines, 1912, by C. H. Nesbitt (Birmingham Mineral Map Co., 1912), 29; Alabama, Annual Report of Coal Mines, 1913, by C. H. Nesbitt (Birmingham: n.p., 1915), 10, 17, 24; Alabama, Annual Report of Coal Mines, 1916, by C. H. Nesbitt (Birmingham: n.p., 1916), 11, 18, 25, 51; Alabama, Annual Report of Coal Mines, 1917, by C. H. Nesbitt (Birmingham: n.p., 1917), 11, 19, 27; Alabama, Annual Report of Coal Mines, 1918, by C. H. Nesbitt (Birmingham: n.p., 1918), 9, 16, 25, 51; Alabama, Annual Report of Coal Mines, 1919, by C. H. Nesbitt (Birmingham: n.p., 1919), 17, 24, 32; Childers, Erskine Ramsay, 215.

idle when the United Mine Workers of America (UMWA) called a general strike on September 7, 1920. By February 1921, the position of the miners had proved untenable, as weakened markets had reduced the demand for coal below the available supply. Although the strike was settled on February 22, 1921, the mines at Brookside never reopened. The Sloss-Sheffield Steel and Iron Company removed the Robinson-Ramsay coal washer and all other surface workings, including the stone retaining walls around the beehive coke ovens. The Sloss Company maintained ownership of the site until it merged with the U.S. Pipe and Foundry Company in 1952.[13]

---

[13]"Analysis of Operating Conditions in Coal Fields," Dixie Manufacture, July 25, 1920, 8; "Production in Alabama Coal Mines," Dixie Manufacture, February 10, 1921, 6; "Coal Strike in Alabama Ended," Dixie Manufacture, February 25, 1921, 7; John Bensco, retired mayor of Brookside, interviewed by author, July 24, 1992.